

REMARKS

The examiner is thanked for a thorough examination of the present patent application.

Claims 1-6 were cancelled in a Preliminary Amendment. Claims 7-12 are pending with Claim 7 being the sole independent claim. Claims 8-12 depend from, directly or ultimately, Claim 7.

I. OBJECTION TO CLAIMS 8-10.

Claims 8-10 were objected to for incorrect spelling of “bonding” as “boding.” Claims 8-10 are currently amended to correct the incorrect spelling.

II. REJECTION UNDER 35 USC 102(a)

Claims 7, 9, 11-12 were rejected 35 U.S.C. 102(a) as being anticipated by Ruby (U.S. Patent No. 5,873,153). The applicant respectfully traverses.

“A claim is anticipated only if **each and every element** as set forth in the claim is found ... in a single prior art reference.” *Verdegall Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, USQP2D 1051 (Fed. Cir. 1987) (Emphasis added). In fact, for a valid rejection under 35 U.S.C. 102(b), “[t]he **identical invention** must be shown in as **complete detail** as is contained in the ... claim.” *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 U.S.P.Q.2d 1913 (Fed. Cir. 1989) (Emphasis added). Moreover, “**All words** in a claim must be considered in judging the patentability of that claim against the prior art.” *In re Wilson*, 424 F.2d 1382, 1385, 165 U.S.P.Q. 494 (CCPA 1970) (Emphasis added).

The applicant respectfully submits that the Ruby reference fails to anticipate the rejected claims for failing to “each and every element” of the claims.

Firstly, the applicant respectfully submits that the Ruby reference fails to “bonding pad” of Claim 7. The rejection alleges that the Ruby reference’s via 303 is the “bonding pad” of Claims 7. The applicant respectfully traverses.

Claim 7 recites a step of “fabricating a bonding pad (62, 64).” Claim 7, reference numbers added. The bonding pad is typically a top-exposed layer on which wires are bonded to (thus, the name “bonding pad”) connect the device to a chip package. See, e.g., Stanley Wolf, *Silicon Processing, Volume 2 – Process Integration* (Lattice Press, 1990), p. 337.

In contrast, in the Ruby reference, it’s via 303 is an opening through a temporary sacrificial layer 302. See, Ruby, Figure 11 and column 6. The via 303 is filled with metal to form a metallic column to support the device (FBAR 300) which is then suspended by removing the temporary sacrificial layer 302. Ruby, column 6, lines 37-40 and Ruby, Abstract, last sentence of the Abstract. In short, in the Ruby reference, it’s via 303 and the metal filling is structural support columns for the FBAR 300, and not a “bonding pad” of Claim 7. Further, Ruby’s via 303 or support columns 307 are not exposed for wire bonding. Accordingly, neither the Ruby’s via 303 nor support columns 307 anticipates the “bonding pad” of Claim 7.

Secondly, Claim 7 recites that “portion of said bonding pad (62, 64) in contact with the substrate (14) to form a Schottky diode.” Claim 7, reference numbers added. In contrast, the Ruby reference teaches neither the bonding pad in contact with its substrate nor formation of a Schottky diode.

The rejection alleges that the contact between Ruby’s via 303 and Ruby’s substrate 301 “inherently forms a Schottly[sic] diode.” The applicant traverses. Again, Ruby’s via 303 is not the “bonding pad” of Claim 7. Further, the rejection fails to meet *In re Robert*’s requirement for inherency which states that “[t]o establish inherency, the extrinsic evidence ‘must make clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill. Inherency, however, may not be established by probabilities or possibilities. The mere fact that a certain thing may result from a given set of circumstances is not

sufficient.” *In re Robertson*, 169 F.3d 743, 745, 49 USPQ2d 1949, 1950-51 (Fed. Cir. 1999) (citations omitted) (emphasis added). There is no extrinsic clear evidence that such Schottky diode is necessarily present at the junction of Ruby’s via 303 (essentially a hole) and Ruby’s substrate 301.

Claims 9, 11-12 depend, directly or ultimately, on Claim 7. The applicant respectfully submits that Claims 9, 11-12 are not anticipated by the Ruby reference for at least the same reasons for which the Ruby reference fails to anticipate Claim 7. See, e.g., *In re Fine*, 837 F.2d 1071, 5 U.S.P.Q.2d 1596 (Fed. Cir. 1988).

III. REJECTION OF UNDER 35 USC 103(a)

Claims 8 and 10 were rejected under U.S.C. 103(a) as being unpatentable over the Ruby reference. The applicant respectfully traverses.

For a valid rejection under 35 U.S.C. 103(a), “[t]he **examiner bears the initial burden** of factually supporting any *prima facie* conclusion of obviousness.” MPEP 2142 (italic in the original; bold added). To establish a *prima facie* case of obviousness, three basic criteria must be met. **First**, there must be some suggestion or motivation to modify the reference. **Second**, there must be a reasonable expectation of success. **Finally**, the reference, when modified, must teach or suggest all the claimed limitations.” See, e.g., *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991); MPEP 212 et seq. (emphasis added). “The mere fact that reference **can be** combined or modified does not render the resultant combination obvious **unless the prior art also suggests** the desirability of the combination.” MPEP 2143 citing *In re Mills*, 916 F.2d 680, 16 USPQ2d 1430 (Fed. Cir. 1990) (Emphasis added). In fact, there must be a suggestion or motivation **in the reference** to do so.” *In re Mills*, 916 F.2d at 682, 16 USPQ2d at 1432 (emphasis added).

Here, the rejection is invalid for failing to establish the elements of a valid *prima facie* case of obviousness. Firstly, there is no suggestion or motivation to modify the reference. The Ruby reference discusses neither electrostatic protection (ESD) nor

formation of diodes, nor the use of bonding pads. Thus, there is no motivation to modify the Ruby reference to form a plurality of Schottky diodes of Claim 8. Further, there is no motivation to modify the Ruby reference to form bonding pads using the metals recited in Claim 10.


Secondly, since the Ruby reference fails to discuss electrostatic protection (ESD), formation of diodes, or the use of bonding pads, there is no expectation of success should the Ruby reference be modified to form a plurality of Schottky diodes of Claim 8 or should the Ruby reference be modified using the metals recited in Claim 10.

Finally, since the Ruby reference fails to discuss electrostatic protection (ESD), formation of diodes, or the use of bonding pads, even if the Ruby reference is modified to form a plurality of Schottky diodes of Claim 8 or even if the Ruby reference is modified using the metals recited in Claim 10, the Ruby reference would fail to each all the elements of Claims 8 and 10.

CONCLUSION

In view of the foregoing Remarks, the applicant respectfully submits that the entire application is in condition for allowance. The applicant respectfully requests that a timely Notice of Allowance be issued in this case.

Respectfully submitted,



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